

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	<b>MAIL STOP AMENDMENT</b>
Heinz Bannasch et al.	)	
Application No.: 10/574,532	)	Group Art Unit: 3641
Filed: December 1, 2006	)	Examiner: Troy Daniel J
For: METHOD AND APPARATUS FOR	)	Confirmation No.: 4115
PROTECTING SHIPS AGAINST	)	
TERMINAL HOMING PHASE-	)	
GUIDED MISSILES	)	

**AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated August 21, 2008, the period for reply being extended by the attached petition for extension of time, please amend the above-identified application as follows:

**AMENDMENTS TO THE SPECIFICATION:**

Please replace the title with the following amended title:

METHOD AND APPARATUS FOR PROTECTING SHIPS AGAINST  
TERMINAL ~~HOMING~~ PHASE-GUIDED MISSILES

Please replace paragraph [0001] with the following amended paragraph:

[0001] The present invention relates to a method for protecting ships against terminal ~~homing~~ phase-guided missiles provided with a target data analysis system ~~in accordance with claim 1~~, as well as a protective system apparatus ~~in accordance with claim 13~~.

Please replace paragraph [0003] with the following amended paragraph:

[0003] Modern antishipping missiles possess radar (RF), infrared (IR), or DUAL MODE (RF/IR) sensors for the terminal ~~homing~~ phase guidance. Corresponding "intelligent" data analyses enable these missiles to discriminate between target and spurious target.

Please replace paragraph [0023] with the following amended paragraph:

[0023] HERRMANN, Helmut wt 2/89 "Tarnen und Tacuschen bei der Marine" [Concealment and Deception in the Navy] discloses a method for protecting ships against terminal ~~homing~~ phase-guided missiles provided with a target data analysis system. This reference furthermore describes that the missile moving in a direction towards the ship to be protected is detected by suitable sensors, located, and its expected trajectory is calculated by means of a computer.

Please delete paragraph [0031]:

~~[0031] In terms of method, this object is achieved through the characterizing features of claim 1.~~

Please delete paragraph [0032]:

~~[0032] In terms of apparatus, the above object is achieved through the characterizing features of claim 13.~~

Please replace paragraph [0033] with the following amended paragraph:

[0033] The following demands are being made to a method and an apparatus for the protection of ships against "intelligent", terminal homing phase-guided missiles:

Please replace paragraph [0056] with the following amended paragraph:

[0056] In particular the present invention relates to a method for protecting ships against terminal homing phase-guided missiles provided with a target data analysis system, wherein

Please replace paragraph [0081] with the following amended paragraph:

[0081] sensors for detecting terminal homing phase-guided missiles having a target data analysis system for discriminating between a genuine and a spurious target, that approach a ship to be protected;

Please replace paragraph [0103] with the following amended paragraph:

[0103] FIG. 9 shows the essential elements of the device in accordance with the invention; ~~[[and]]~~

Please replace paragraph [0104] with the following amended paragraph:

[0104] FIG. 10 is a schematic representation of the formation of a decoy pattern at the intended coordinates~~[[.]]~~ ;

Please insert the following paragraph between paragraphs [0104] and [0105]:

Fig. 11 is a schematic representation of various types of decoys.

Please replace paragraph [0125] with the following amended paragraph:

[0125] electric launching means 7 which fire the single decoy ammunitions 6 in randomly adjustable temporal intervals,

Please replace paragraph [0126] with the following amended paragraph:

[0126] an elevational drive 8 having the form of an electric hydraulic or pneumatic drive for movement in height of the launching platform, as well as an azimuthal drive 9 having the form of an electric, hydraulic or pneumatic drive for sideways movement of the launching platform,

Please replace paragraph [0128] with the following amended paragraph:

[0128] a shock absorber 10 at the base platform for attenuating rapid ship movements owing, e.g., to mine detonation shocks,

Please replace paragraph [0129] with the following amended paragraph:

[0129] STEALTH trimmings 11 for reducing the ship's signature in the RF and IR ranges, preferably formed of obliquely inclined metallic or carbon fiber surfaces,

Please replace paragraph [0132] with the following amended paragraph:

[0132] Lastly, by means of the decoy ammunitions variable in distance, in connection with the dirigible decoy launcher, a decoy pattern is generated that is freely selectable in all spatial and temporal dimensions (FIG. 1 E), wherein the active compositions contained in the decoy ammunitions include effective charges having an RF, IR, or combined RF/IR effect which reproduce the signature of the ship to be protected. The decoy 6 may be unfolded by inflating with hot gases from gas generators 17, for example, pyrotechnical gas generators, or air bag gas generators.

Please replace paragraph [0172] with the following amended paragraph:

[0172] For the purposes of the further description, reference is made for simplicity to the decoy pattern represented in FIG. 10 (FIG. 10, reference symbol ~~[[4]]~~ 6), which is composed of merely  $n=4$  decoys. The spatial ( $x_n, y_n, z_n$ ) and temporal intended coordinates ( $t_n$ ) are unambiguously defined with regard to the decoy ejectors (FIG. 10, reference symbol ~~[[2]]~~ 4) installed on the ship (TK ( $x_n, y_n, z_n, t_n$ )).

Please replace paragraph [0173] with the following amended paragraph:

[0173] In order to realize the predetermined decoy pattern (intended values), in accordance with the invention the following calculation steps are performed by

means of the computer (~~FIG. 7, reference symbol 2~~) implementing physical-mathematical standard procedures:

Please replace paragraph [0174] with the following amended paragraph:

[0174] Calculation of the ballistic trajectories of the decoy ammunitions (~~FIG. 8, reference symbol 3~~) in dependence on the air resistance, mass ( $m$ ), and velocity of departure ( $v_0$ ) thereof.

Please insert the following paragraph after paragraph [0194]:

In a preferred embodiment of the present invention, a radio frequency reflector, in particular a radar reflector 12, a corner reflector 13, a radar reflector having eight tri-hedral corner reflectors (tri-hedrals) 14, a corner reflector known per se in the form of nettings or foils 15, may be used as a decoy 6.

**IN THE ABSTRACT:**

Please replace the Abstract with the Abstract appearing below:

**ABSTRACT**

The present invention concerns a method for protecting ships against terminal homing phase-guided missiles provided with a target data analysis system, as well as an apparatus for implementing the method, wherein the missile moving in a direction towards the ship to be protected is detected by suitable sensors, located, and its expected trajectory is calculated by means of a computer; the type of target data analysis performed by the missile and its attack structure is detected by means of suitable sensors, and the missile is classified with regard to the type of its target data analysis; the current wind speed and direction of wind is continuously detected by means of wind measuring sensors; the ship's own data: travelling speed, direction of travel, rolling and pitching motions, is continuously detected by means of motion and/or navigation sensors; the detected sensor data is transmitted to a fire control calculator which controls at least one decoy launcher and generates, by taking into account all of the detected data, an effective decoy pattern that is adapted to missile and attack structure.